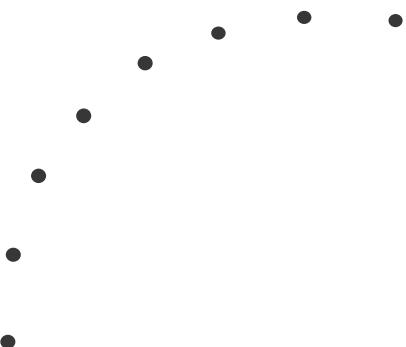


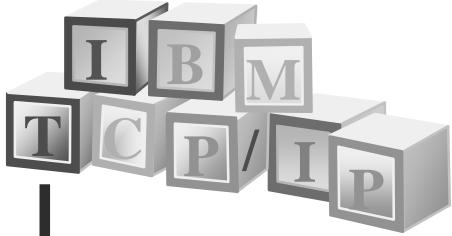
File Transfer Protocol Daemon (FTPD)

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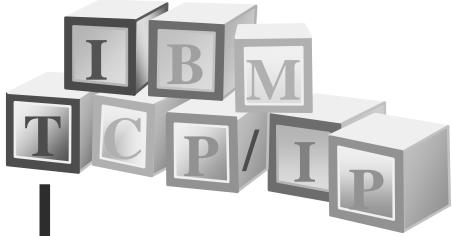
Overview

- **Description**

- Provides file access services to Clients
 - 32bit code based on the TCP/IP V1.x 16bit design

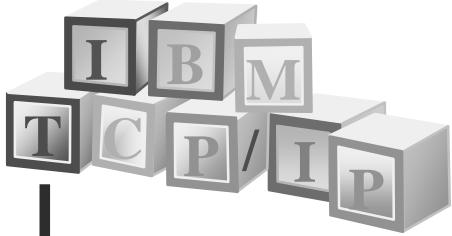
- **RFC Implementation**

- RFC959 - File Transfer Protocol



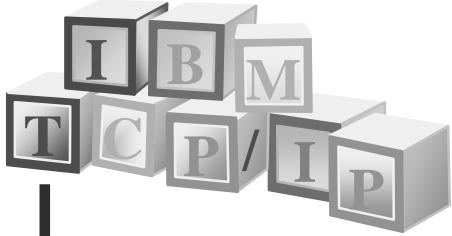
Terminology

- ETC - The ETC environment variable where the configuration files are located
- TRUSERS - The FTPD user authorization file located in the ETC directory



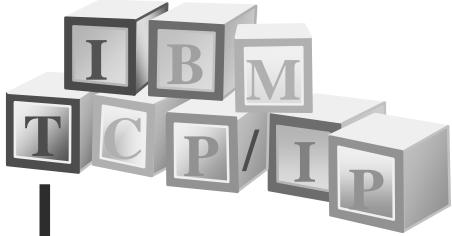
Overview - Features

- Documented New Features
 - SET FTPD.TIMEOUT=<seconds>
 - Session Idle timeout
 - 30 to 7200, 900 is the default
 - Session logging
 - FTPD/INETD Window (as before)
 - ANONYMOUS user can be prompted for their EMail address. Specify ANY password for the anonymous userid.
- SYSLOGD.EXE support. Logs valid, invalid, and warning messages to ETC\SYSLOG.MSG
- Customized Banner messages to be displayed
 - ASCII files created by the user. If they exist, FTPD will send the information to the Client as FTP Messages
 - ETC\WELCOME.FTP Welcome banner for when the user logs in.
 - ETC\BADLOGIN Banner to display if the user fails to provide valid userid/password within the 5 attempts
 - MESSAGE.FTP Information to be displayed when the user CD's into that directory. This file is NOT displayed when the user logs in.



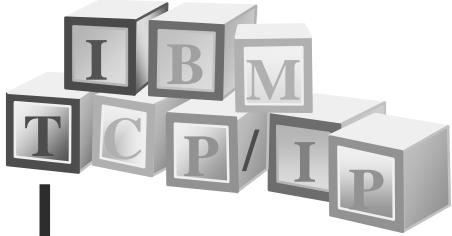
Overview - Features Continued

- Undocumented (README FILE) new keyword features for TRUSERS file.
 - f* default: <valid_directory> Specifies default directory to place user in. If not defined, FTPD uses the 1st valid Write or Read directory.
 - f* loginfo: <log_level> keyword(s). Customize session logging per user. Requires SYSLOGD to be running. log_level can be one or more of the following keywords:
 - logcd CD commands
 - logget GET/MGET/RECV
 - logput PUT/MPUT/SEND
 - logdir DIR/LS
 - logren RENAME
 - logdel DELETE/MDELETE
 - logmkd MKDIR
 - logall Log ALL above commands
 - logdbg Logs FTP command/replies. This is NOT documented and is only for debug purposes.



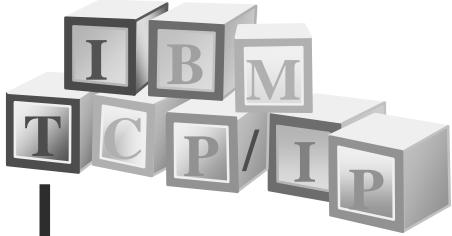
Limitations & Dependencies

- Concurrent FTP Sessions
 - f* Limitation is determined by system resources.
 - f* Using FTPD.TIMEOUT parameter may help by closing idle connections early.
- SYSLOGD.EXE
 - f* Appends to SYSLOG.MSG file
 - f* Could fill hard drive
- Netscape 3.0Beta problems
 - f* Forces CD / and most systems do not allow Anonymous user to access Root.



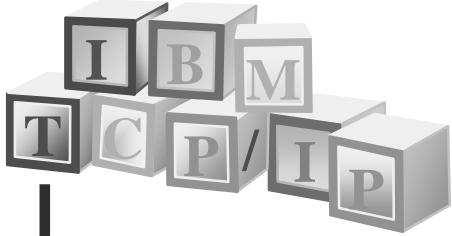
Installation

- Installed files that make up this function
 - $_f$ \tcpip\BIN\FTPD.EXE Main process which listens for Client connections
 - $_f$ \tcpip\BIN\FTPDC.EXE Actual FTP Server that handles the Client session
 - $_f$ \mptn\ETC\TRUSERS Configuration file that defines the user, password, and directory access
 - $_f$ \tcpip\BIN\SYSLOGD.EXE not part of FTPD but is used for logging.
- Migration/Compatibility Issues
 - $_f$ Fully compatible with previous TRUSERS file.



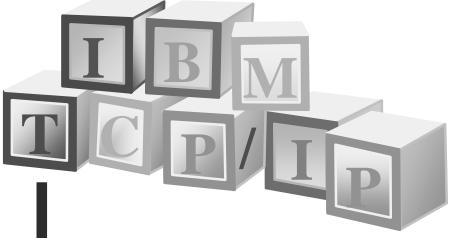
Configuration & Setup

- TRUSERS Authorization
 - TCP/IP Configuration Notebook
 - "anonymous" user EMail prompt
- What parameters could be changed to improve performance?
 - `FTPD.TIMEOUT`
- Enhanced Configuration Features. Requires manual edit of TRUSERS file if the user wants to utilize them.
 - "default:" and "loginfo:" keywords.



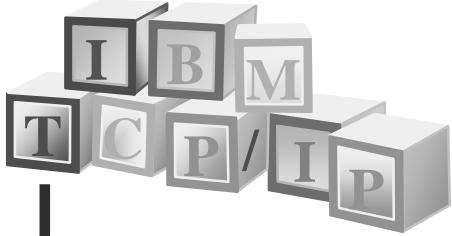
Invocation & Startup

- How this function is started
 - $_f$ INETD
 - $_f$ Foreground
 - port parameter. Specifies a non-wellknown port that FTPD should listen on.
 - codepage Specify the codepage that FTPD should use for translation.
 - What happens during initialization?
 - $_f$ FTPD.EXE
 - FTPD Banner
 - Listen for Client connection
 - Starts FTPDC.EXE to handle the session.
 - $_f$ FTPDC.EXE
 - Prompt Client for Userid
 - Parse TRUSERS
 - Prompt Client for Password
 - Compares the userid & password with what is in the TRUSERS file and returns the appropriate response.
 - Handles the session until the user quits



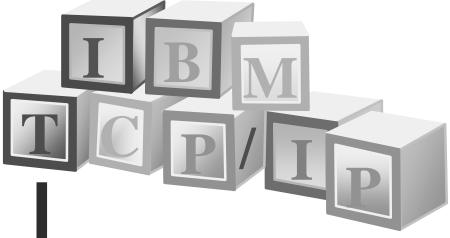
Error Messages, Codes & Logs

- what error logs are available
 - f* Log messages written to INETD or FTPD window.
 - limited to number of lines available in that window.
 - f* SYSLOGD messages
 - Requires SYSLOGD to be running. This is not selectable from the TCPCFG Autostart list.
 - Automatic logging of Connect, Login, Logout, Warning and other Invalid/Unauthorized messages
 - Enhanced session activity logging if the loginfo keyword is defined for the user.



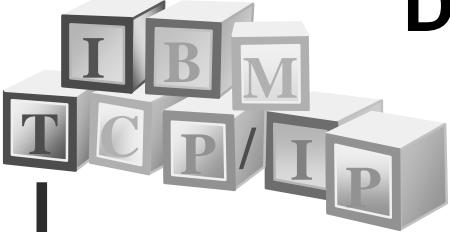
Common User Problems

- Client cannot login
 - f* Unauthorized message response
 - Check that the user is defined in the TRUSERS file and the Client is using the correct spelling
- Client logs in but receives "Cannot set default directory" message
 - f* FTPDC cannot place the user in a directory where they have Read and/or Write access
 - Make sure that the TRUSERS definition for this user has a valid directory for Read and/or write.
- FTPD is not logging
 - f* SYSLOGD is not running
 - f* ETC\SYSLOG.MSG file is empty
 - SYSLOGD.EXE locks the file while it is running and it may appear to not receive messages.
 - f* Enhanced messages are not being logged
 - TRUSERS missing "loginfo:" keyword
 - TRUSERS has incorrect parameters for "loginfo:" keyword



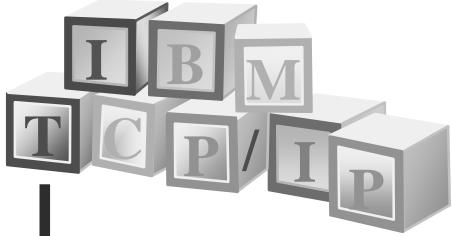
Debugging & Troubleshooting

- Questions to ask the user
 - Can you reproduce the failure and how?
 - Are there any error messages?
- Types of information needed
 - FTP command trace
 - Login to the host using line mode FTP
 - debug <enter>
 - reproduce the problem
 - The trace will be the extra messages that now are displayed to the screen.
 - FTPD debug trace
 - Modify TRUSERS file adding: loginfo: logdbg
 - Start SYSLOGD and reproduce the error
 - Stop SYSLOGD and get the ETC\SYSLOG.MSG file to see the trace data.
 - Trap in FTPD/FTPDC
 - Trap register information
 - FTPD version (date/time from Banner page)
 - FTPDC version (date/time that is received when you first login to the server).



Debug & Troubleshooting continued

- Any "hidden" parameters that can help in diagnosis
 - f* loginfo: keyword in TRUSERS file also accepts logdbg parameter to write debug information to SYSLOGD.EXE.
- How to read traces
 - f* The FTPD debug trace shows ALL commands sent/received with an "arrow" showing the direction of the data.



Source Overview

- All source code is in CMVC
 - f* family - wstcp
 - f* release- os2apps32
 - f* components
 - ftp.c
 - ftpd.c
 - ftpdc.c